

We claim:

- 1 1. A screed assembly for a paving vehicle for forming a mat of
2 paving material upon a base surface, the screed assembly
3 comprising:
 - 4 a frame connectable with the vehicle;
 - 5 a first screed plate movably connected with the frame so as
6 to be rotatably displaceable about a first axis;
 - 7 a second screed plate movably connected with the first
8 screed plate so as to be rotatably displaceable about a second
9 axis extending generally perpendicular to the first axis; and
10 a connective member having a first end connected with the
11 frame and a second end linearly displaceable with respect to the
12 first end and pivotably connected with the second screed plate
13 such that when the first screed plate rotatably displaces about
14 the first axis, the second screed plate pivotably displaces with
15 respect to the connective member while a distance between the
16 first and second ends of the connective member remains
17 substantially constant.
- 18 2. The screed assembly as recited in claim 1 wherein the first
19 screed plate has a first working surface, the second screed
20 plate has a second working surface, and the second screed plate
21 is rotatably displaceable about a third axis extending through
22 the second end of the connective member, the third axis being
23 substantially collinear with the first axis when the first and
24 second screed working surfaces are generally disposed within a
25 common plane.
- 26 3. The screed assembly as recited in claim 2 wherein the first
27 axis and the third axis each extend substantially perpendicular
28 to the second axis and one of are each spaced a substantially

4 equal distance in a perpendicular direction with respect to the
5 second axis and each intersect the second axis.

1 4. The screed assembly as recited in claim 1 wherein the
2 paving vehicle has a generally horizontal, longitudinal
3 centerline, the first axis is generally horizontal and extends
4 generally perpendicular to the vehicle centerline when the frame
5 is connected with the vehicle, and the second axis is generally
6 horizontal and extends generally parallel to the vehicle
7 centerline.

1 5. The screed assembly as recited in claim 1 wherein linear
2 displacement of the connective member second end with respect
3 the connective member first end causes the second screed plate
4 to rotatably displace about the second axis.

1 6. The screed assembly as recited in claim 1 wherein
2 rotational displacement of the second screed plate about the
3 second axis adjusts an acute vertical angle between the second
4 screed plate and the first screed plate.

1 7. The screed assembly as recited in claim 6 wherein when the
2 frame is connected with the paving vehicle and the first and
3 second screed plates are arranged such that the acute vertical
4 angle between the two plates has a value greater than zero
5 degrees, the screed assembly forms the material mat with an
6 angled section having an upper surface disposed at a vertical
7 angle with respect to an upper surface of a remaining section of
8 the material mat.

1 8. The screed assembly as recited in claim 1 wherein when the
2 frame is connected with the paving vehicle, rotational

3 displacement of the first screed plate about the first axis
4 adjusts an acute vertical angle between the first screed plate
5 and the base surface so as to adjust a thickness of the material
6 mat formed by the paving vehicle.

1 9. The screed assembly as recited in claim 1 wherein the
2 connective member is a hydraulic cylinder.

1 10. The screed assembly as recited in claim 1 further
2 comprising a self-aligning pivot device including a first
3 portion attached to the second screed plate and a second portion
4 attached to the connective member second end and movably
5 attached to the first portion such that each pivot portion is
6 rotatably displaceable with respect to the other portion at
7 least partially about a third axis and at least partially about
8 fourth axis extending generally perpendicular to the third axis.

1 11. The screed assembly as recited in claim 10 wherein when the
2 first screed plate rotatably displaces about the first axis, the
3 first pivot portion rotatably displaces with respect to the
4 second pivot portion about the third axis so that the connective
5 member second end remains substantially stationary with respect
6 to the connective member first end.

1 12. A screed assembly for a paving vehicle for forming a mat of
2 paving material upon a generally horizontal base surface, the
3 vehicle having a generally horizontal, longitudinal centerline
4 and the material mat having a generally horizontal upper
5 surface, the screed assembly comprising:

6 a frame connectable with the vehicle;
7 a first screed plate having a first working surface and
8 being movably connected with the frame so as to be rotatably

9 displaceable about a first, generally horizontal axis extending
10 generally perpendicular to the vehicle centerline;

11 a second screed plate having a second working surface and
12 being movably connected with the first screed plate so as to be
13 rotatably displaceable about a second, generally horizontal axis
14 extending generally perpendicular to the first axis; and

15 a connective member having a first end connected with the
16 frame and a second end pivotably connected with the second
17 screed plate, the connective member second end being located on
18 the first axis when the first and second working surfaces are
19 each generally disposed within a common plane such that when the
20 first plate rotatably displaces about the first axis, the second
21 screed plate pivotably displaces about the connective member
22 second end while the connective member second end remains
23 substantially stationary with respect to the connective member
24 first end.

1 13. The screed assembly as recited in claim 12 wherein the
2 second screed plate is rotatably displaceable about a third axis
3 extending through the second end of the connective member, the
4 third axis being substantially collinear with the first axis
5 when the first and second screed working surfaces are generally
6 disposed within a common plane.

1 14. The screed assembly as recited in claim 12 wherein linear
2 displacement of the connective member second end with respect
3 the connective member first end causes the second screed plate
4 to rotatably displace about the second axis.

1 15. The screed assembly as recited in claim 12 wherein
2 rotational displacement of the second screed plate about the

3 second axis adjusts an acute vertical angle between the second
4 screed plate and the first screed plate.

1 16. The screed assembly as recited in claim 15 wherein when the
2 frame is connected with the paving vehicle and the first and
3 second screed plates are arranged such that the acute vertical
4 angle between the two plates has a value greater than zero
5 degrees, the screed assembly forms the material mat with an
6 angled section having an upper surface disposed at a vertical
7 angle with respect to an upper surface of a remaining section of
8 the material mat.

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2 17. The screed assembly as recited in claim 12 wherein when the
3 frame is connected with the paving vehicle, rotational
4 displacement of the first screed plate about the first axis
5 adjusts an acute vertical angle between the first screed plate
6 and the base surface so as to adjust a thickness of the material
mat formed by the paving vehicle.

1 18. The screed assembly as recited in claim 12 wherein the
2 connective member is a hydraulic cylinder.

1 19. The screed assembly as recited in claim 12 further
2 comprising a self-aligning pivot device including a first
3 portion attached to the second screed plate and a second portion
4 attached to the connective member second end and movably
5 attached to the first portion such that each pivot portion is
6 rotatably displaceable with respect to the other portion at
7 least partially about a third axis and at least partially about
8 fourth axis extending generally perpendicular to the third axis.

1 20. A paving vehicle for forming a mat of paving material upon
2 a generally horizontal base surface, the paver comprising:
3 a chassis having a generally horizontal, longitudinal
4 centerline;
5 a screed frame connected with the vehicle;
6 a first screed plate movably connected with the frame so as
7 to be rotatably displaceable about a first, generally horizontal
8 axis extending generally perpendicular to the vehicle
9 centerline;
10 a second screed plate movably connected with the first
11 screed plate so as to be rotatably displaceable about a second,
12 generally horizontal axis extending generally perpendicular to
13 the first axis; and
14 a connective member having a first end connected with the
15 frame, a second end pivotably connected with the second screed
16 plate and a centerline extending between the first and second
17 ends, the connective member centerline and the first axis being
18 generally disposed within a common vertical plane such that when
19 the first screed plate is rotatably displaced about the first
20 axis, a distance between the first and second ends of the
21 connective member remains substantially constant.